

National Aeronautics and
Space Administration



Goddard Space Flight Center
Greenbelt, Maryland 20771

Laboratory Chief's Summary

Dear Reader:

Welcome to the Laboratory for Atmospheres' 2006 Technical Highlights report. I thank you for your interest. We publish this report each year to describe our research and to summarize our accomplishments.

This document is intended for a broad audience. Our readers include colleagues within NASA, scientists outside the agency, science graduate students, and members of the general public. Inside are descriptions of our organization and facilities, our major activities and science highlights, and our education and outreach accomplishments for calendar year 2006.

The Laboratory's approximately 230 scientists, technologists, and administrative personnel are part of the Earth Sciences Division in the Sciences and Exploration Directorate of the NASA Goddard Space Flight Center. The Laboratory for Atmospheres is continuing our mission of advancing knowledge and understanding of the Earth's atmosphere.

Laboratory scientists continued having a productive year organizing and participating in international field campaigns, developing and refining instruments, analyzing data, expanding data sets, and improving models. The Aura spacecraft, launched in July 2004 is an important component of the Lab's science activities through validation campaigns and data analysis and modeling. These efforts are helping us better understand our home planet's environment, and are increasing our knowledge of the complex chemistry of the atmosphere.

Several noteworthy events took place during 2006. Field campaigns contributing to Aura validation efforts in 2006 began with the Costa Rica Aura Validation Experiment (CR-AVE) in January. Others were the Intercontinental Chemical Transport Experiment – Part B (INTEX-B) and the Megacity Initiative: Local and Global Research Observations (MILAGRO) in Mexico, Scout-O3 UV in Greece, and the Water Vapor Validation Experiment-Satellites/Sondes (WAVES) at the Howard University Research Campus in Beltsville, MD. These, and several other field campaigns in which Laboratory members participated are described in detail in Section 4, Major Activities. WAVES, which involved students from Howard University as well as Laboratory members, is further discussed in Section 6, Education and Outreach.

As in previous years, Laboratory scientists garnered many top professional honors. The TOMS Science and Data Processing Team won the 2006 Pecora Award. This is given to individuals or groups that have made outstanding contributions toward understanding Earth through remote sensing. Pawan Bhartia accepted the award for the team at the AGU fall meeting in San Francisco. Yoram Kaufman (deceased) won the 2006 Verner E. Suomi Award granted to individuals in recognition of highly significant achievement in the atmospheric or related oceanic and hydrologic sciences. The TOMS and UARS Teams were selected by the NASA Headquarters Incentive Awards Board to receive Group Achievement Awards. These were presented in June at a ceremony held at Martin's Crosswinds in Greenbelt, MD. These, and numerous other awards received by Laboratory members are described in Section 5.6 of this report.

We continued the very successful Distinguished Lecturer Seminar Series, which focused on precipitation, clouds, aerosol and their physical/chemical linkages; details of the series can be found on our Web site.

The year 2006 was also a time to bid farewell to Geary Schwemmer, a highly valued instrument scientist who was a member of our Laboratory for many years. I am pleased to greet Jackie Haywood, our new administrative assistant, as the only new civil servant member of the Laboratory hired during 2006.

This report is being published in two media: a printed version, and an electronic version on our Laboratory for Atmospheres Web site, <http://atmospheres.gsfc.nasa.gov>. Check out our Web site. It continues to be redesigned to be more useful for our scientists, colleagues, and the public. We welcome comments on this 2006 report and on the material displayed on our Web site. Your comments may be submitted online. Please check out our Web site.

Finally, we note that a major tragedy struck the Laboratory during 2006. Yoram Kaufman, a friend and colleague whose outstanding service to our Laboratory spanned a period of more than 25 years, died on May 31 from injuries he received in a collision with a car while biking near Goddard on May 26. His death has been a traumatic experience for all of us in the Laboratory. The cover of this year's report is dedicated to his work. His life and many accomplishments are reviewed immediately following this letter: Yoram Kaufman, A Retrospective.

It is to his memory that this report is respectfully dedicated.

In memory of Yoram,

A handwritten signature in black ink, appearing to read 'William K.-M. Lau', with a stylized flourish at the end.

William K.-M. Lau,
Chief, Laboratory for Atmospheres, Code 613

March 2007